## Physiological Genomics®

Editor-in-Chief: BINA JOE

Associate Editors: HILARY COLLER MICHAEL R. GARRETT JUSTIN GROBE LAUREN GERARD KOCH

MARTIN McBRIDE PATRICIA MUNROE SANDOSH PADMANABHAN LEAH SOLBERG WOODS TIM WILTSHIRE COLIN YOUNG

Consulting Editors: ANDREW S. GREENE MINGYU LIANG

**Editorial Board:** 

AMY C. ARNOLD
EUAN ASHLEY
RADHA AYYAGARI
MARCAS M. BAMMAN
JATIN BURNISTON
SAMANTHA BUTLER
MICHAEL BUTTERWORTH
JONATHAN CAVANAUGH
FADI CHARCHAR
QIN M. CHEN
DAN CRONA
PANOS DELOUKAS

MARCEL DEN HOED

MICHELLE DIGMAN

PATRICK FUEGER

DYLAN GLUBB

PERCIO GULKO

VICTOR GURYEV

PETER DORIS

YUMEI FENG

DAN HERTZ PAAVO HONKAKOSKI MICHAEL HULTSTRÖM MAJA JAGODIC YALDA JAMSHIDI ANDREW D. JOHNSON MARTIN KENNEDY TUOMAS OSKARI KILPELÄINEN DAVID KISOR RON KORSTANJE ERIC G. KRAUSE ALISON KRIEGEL KATE LAWRENSON HEATHER LAWSON ERIC LAZARTIGUES JOHN McCARTHY JOHN D. McCLURE CRISTINA MENNI BORBALA MIFSUD MANI MUDALIAR SWAPAN NATH MIKKO NIEMI

KAILASH N. PANDEY FRANK PARK BRIAN PARKS **BOGDAN PASANIUC** MINOLI PERRERA TUOMO RANKINEN R. SCOTT RECTOR RICHARD ROMAN UTE I. SCHOLL ANDREW J. P. SMITH PERNILLA STRIDH YASUHARU TABARA JOHN THYFAULT ANDREW TINKER GEORGE TRACHTE ANA M. VALDES RICHARD D. WAINFORD ULRIK WISLØFF ROY WOLLMAN ALEXANDER ZAMBON JUDITH ZAUGG JASENKA ZUBCEVIC

Publications Committee
C. D. SIGMUND, Chair
C. E. CARR
D. ELLISON
A. S. GREENE
P. A. INSEL
L. K. ROGERS
L. WOLD

Ex officio
J. F. RECKELHOFF, APS President
D. BROWN, President-Elect
P. E. MOLINA, Past President
M. FRANK, Executive Director
R. SCHEMAN,
Director of Publications
and Executive Editor

A. E. COX
Editorial Manager
P. CHOE
Journal Copy Editor

Physiological Genomics (ISSN-1094-8341) is published by the American Physiological Society, 9650 Rockville Pike, Bethesda, MD 20814-3991. Physiological Genomics is published online at http://physiolgenomics. physiology.org (ISSN-1531-2267). Subscription Prices: Institutions (online only): see http://bit.ly/aps\_institution\_pricing. Nonmember individuals (online only): \$285. APS members: online is free. Subscriptions from outside the United States are payable in US currency or full equivalent. Subscriptions are accepted on a calendar-year basis only. Print back issues through 10/2010: Subscriber, \$65 each: Nonsubscriber, \$130 each. Periodicals postage paid at Bethesda, MD, and at additional mailing offices. POSTMAS-

TER: Send address changes to Physiological Genomics, 9650 Rockville Pike, Bethesda, MD 20814-3991.

Physiological Genomics® is a registered trademark of the American Physiological Society.

Copyright © 2017 by the American Physiological Society. Printed in the United States of America by Cadmus Communications—Lancaster Division, Lancaster, PA 17601. The code at the bottom of the first page of an article indicates the copyright owner's consent that copies of that article may be made beyond that permitted by sections 107 and 108 of the US Copyright Law—unless the copies are for general distribution, for advertising, for creating new works, or for resale—provided the

per-copy fee is paid through the Copyright Clearance Center, Inc., 222 Rosewood Dr., Danvers, MA 01923.

Editorial and Business Correspondence: Physiological Genomics, 9650 Rockville Pike, Bethesda, MD 20814-3991.

Disclaimer: The statements and opinions contained in the articles of *Physiological Genomics* are solely those of the individual authors and contributors and not of the American Physiological Society. The appearance of advertisements in the journal is not a warranty, endorsement, or approval of the products or their safety. The American Physiological Society disclaims responsibility for any injury to persons or property resulting from any ideas or products referred to in any article or advertisement.